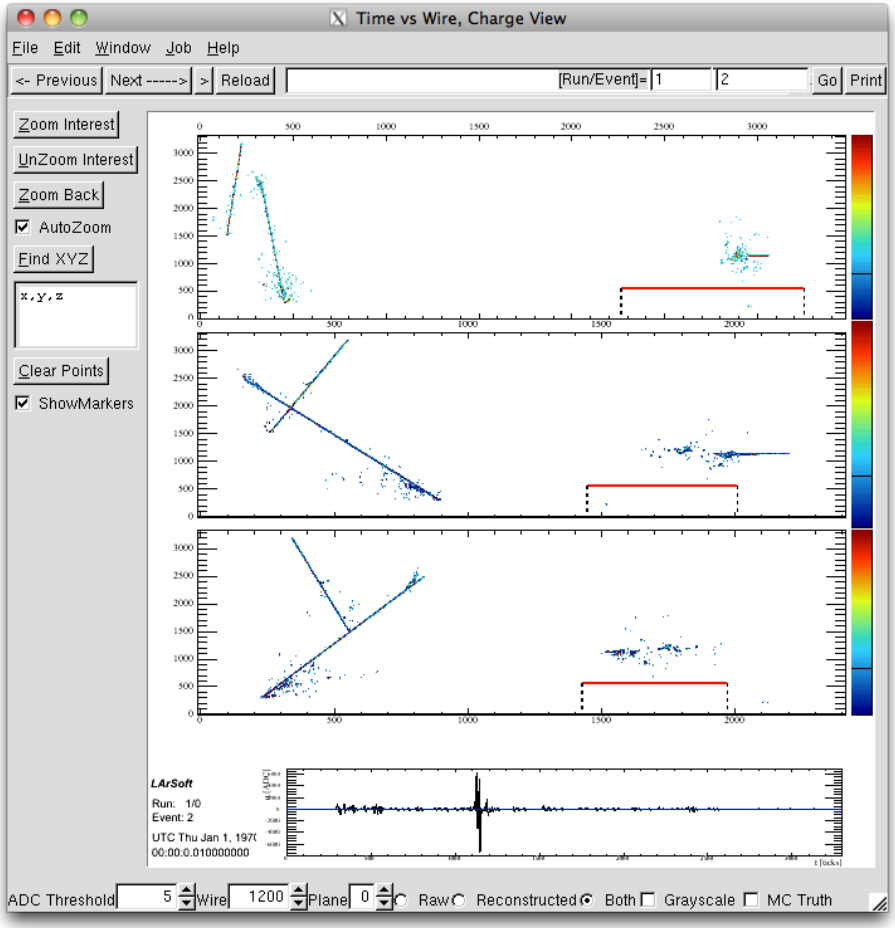
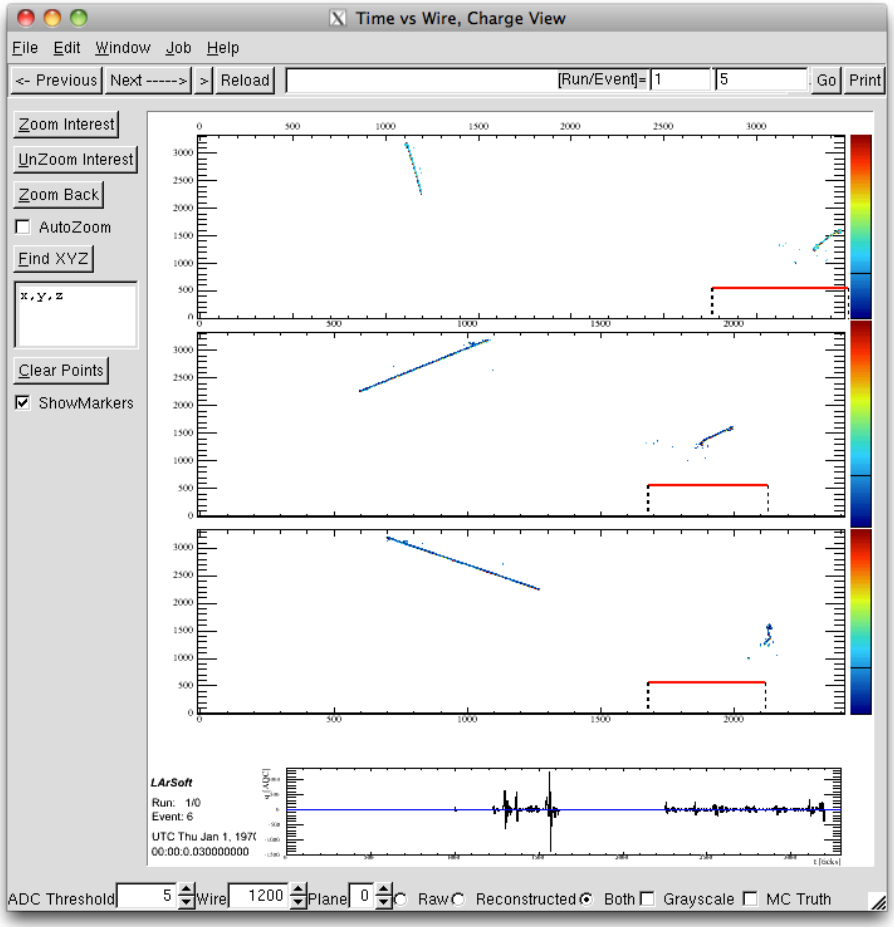
# News Report from Optical Physics

Ben Jones

# Optical Reco

- You will be hearing a lot more from me on optical reconstruction soon – flash finder v2.0 is in the works and many physics studies are coming.
- I have been asked to rerun the new evd option for displaying optical system flashes by LArSoft
- The next slide shows two “cherry picked” events to illustrate the new feature.
- The red line is the flash which was found in time with the beam.
- Most events don’t line up so well – this a property of the flash finder tool rather than the evd feature.


Time vs Wire, Charge View
File Edit Window Job Help
<- Previous
Next ----->
Reload
[Run/Event]= 1 2
Go
Print
Zoom Interest
UnZoom Interest
Zoom Back
AutoZoom
Find XYZ
x,y,z
Clear Points
ShowMarkers
LArSoft
Run: 1/0
Event: 2
UTC Thu Jan 1, 197(
00:00:0.010000000
ADC Threshold 5
Wire 1200
Plane 0
Raw
Reconstructed
Both
Grayscale
MC Truth


Time vs Wire, Charge View
File Edit Window Job Help
<- Previous
Next ----->
Reload
[Run/Event]= 1 5
Go
Print
Zoom Interest
UnZoom Interest
Zoom Back
AutoZoom
Find XYZ
x,y,z
Clear Points
ShowMarkers
LArSoft
Run: 1/0
Event: 6
UTC Thu Jan 1, 197(
00:00:0.030000000
ADC Threshold 5
Wire 1200
Plane 0
Raw
Reconstructed
Both
Grayscale
MC Truth

# New LArG4 Features

- I have added new features to LArG4 for treating parameterized, nontransparent optical volumes such as wireplanes and meshes.
- These have been implemented with realistic parameters for the MicroBooNE geometry
- LBNE wireplane / mesh absorption can be trivially implemented in the same way.
- Design scheme allows for very generic parameterized transmission functions through any gdml volume.
- If you want to know details, come to simulation meeting later today.

# MicroBooNE Library Build

- MicroBooNE fast-sim photon library v2.0 now being built on the grid in latest frozen release.
- New features:
  - Wireplane and mesh absorption
  - Minor optical geometry tweaks
  - Fix to solid angle calculation in light production
  - Change to voxel size, sacrifice ~1.5 resolution for ~1.5^3 = 3.5x statistics
    - Previous : 125 x 125 x 500
    - New: 75 x 75 x 400